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Letter to Editor

Can artificial intelligence contribute to non-alcoholic fatty liver disease monitoring?

Artificial intelligence and non-alcoholic fatty liver

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To the editor:
Non-alcoholic fatty liver disease (NAFLD) is one of an increasing number of liver diseases that encompass a wide spectrum from steatohepatitis to cirrhosis. Liver fibrosis is characterized by progressive accumulation of connective tissue accompanied by necroinflammation and ballooning and is one of the main prognostic factors in NAFLD [1]. The gold standard method to assess liver fibrosis is liver biopsy. Since liver biopsy is invasive and not easy to use in routine daily clinical practice, researchers have turned to non-invasive tests that are easy to use and perform well. Non-invasive tests are generally divided into two main groups: serum tests and imaging methods. In the literature, there are studies in the prediction of fibrosis in NASH patients with serum tests and scores such as Fibrosis-4 Index (FIB-4), Aspartate Aminotransferase Platelet Ratio Index (APRI), BARD score, NAFLD fibrosis score [2].
Ultrasonography (USG) elastography and Magnetic Resonance (MR) elastography are non-invasive imaging modalities to evaluate liver fibrosis. Although fibroscan is currently considered the most valid method, MR elastography is more effective in panoramic evaluation of the liver and intermediate-stage classification [3].
Because of the risk of transformation of NAFLD into liver cirrhosis and hepatocellular carcinoma, close monitoring of the disease and early intervention in its progression is of great importance. Artificial intelligence, first defined in 1956, is a technological substructure that uses computer systems that can mimic human-like cognitive functions such as learning and problem-solving. Zamanian et al. 2024 summarized artificial intelligence-assisted diagnostic models used in the prognosis of NAFLD. They reported that artificial intelligence models using USG-based imaging methods and clinical data together achieved high-reliability percentages in detecting NAFLD prognosis and possible complications[4]. Data-based artificial intelligence applications created by synthesizing imaging methods, serum tests, serum scores, retrospective liver biopsy microscopic images, and patient demographic characteristics will be guiding for multifaceted diseases such as NAFLD, whose prognosis is difficult to predict in advance. With the introduction of such artificial intelligence-based applications into routine clinical practice, benefits such as accelerating disease diagnosis, obtaining early information in prognosis prediction, and reducing possible treatment costs can be achieved. Broad-based studies with large numbers of patients are needed before they can enter routine clinical practice.

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